



Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE PRIMARY EXAMINER

Application of

Applicant : Jerald S. Burkett  
Serial No. : 10/038,946  
Filed : January 3, 2002  
Title : LOAD SHARING COMPOSITE SHAFT  
Docket : BUJ 005 P2

Art Unit : 3626  
Examiner : G. Binda

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

DECLARATION OF JERALD S. BURKETT

I, Jerald S. Burkett, a citizen of the United States and resident of the County of Champaign, State of Ohio, whose Post Office address is 8115 Calland Road, West Liberty, Ohio 43357, declare that:

1. I graduated with a B.S. in Mechanical Engineering from the University of Dayton. While in college, I worked in the composites material lab associated with the University of Dayton Research Institute. Since graduation I have done post-graduate work through the University of Delaware in composites, shells, and structures.
2. My work experience began at Comdyne, where I was chief engineer for 12 years. Now I work at BAC Technologies, [www.bactechnologies.com](http://www.bactechnologies.com).

3. I now have over 24 years of composite cylinder design, analysis, and manufacturing experience. I have extensive experience with the design, qualification and manufacture of filament wound products over a variety of other unique materials which include inconel, titanium alloys, stainless steels, and various thermoplastic materials.
4. I currently have the lightest U.S. Department of Transportation approved cylinder technology on the market today. I also pioneered the first composite cylinder design to receive a 5 year retest from the U.S. Department of Transportation.
5. I am the inventor of the instant application, and am also the listed inventor on U.S. Pat. No. 6,508,477 for an invention entitled Mobile Compressed Gas Module and on U.S. Pat. No. 5,862,938 for an invention entitled Flat Bottom Composite Pressure Vessel.
6. In connection with this application, I have read all the Office Actions and the responses filed thereto in connection with my application. In enumerated paragraphs 8, 9, and 10 of the Office Action, the Examiner mentions "geodesic isotenoid" as if the drawing figures show and the specification discusses the term based on angles. The Examiner continues to misunderstand what one of ordinary skill understands the term to mean, namely that the winding occurs such that there is equal pressure at all points in the winding. The term has nothing to do with "angles" per se. As the glossary of Composites indicates (the cover, index, and relevant pages 12-13 being attached hereto),

the term “geodesic isotenoid” refers to there being a constant stress level in any given filament at all points in its path, not the angles at which the winding occurs. As such, Kreft, while showing three angles in its winding, never states that any of the winding is done so that it is in the form of a geodesic isotenoid, namely, where the winding pressure is always the same. Furthermore, just by looking at the winding in Kreft, one of ordinary skill in the art would immediately appreciate that the winding is not done in a geodesic isotenoid manner, based on the directions of winding that are shown, not because of the angle associated with any of the winding. Thus, there is no reason to conclude that Kreft expected one to do the winding in a geodesic isotenoid manner, as opposed to merely in a multi-layer manner in a plurality of directions to provide strength.

7. The Examiner also states that there is no evidence to support the statement in my specification that the equations used to make the structure disclosed by my invention would be known to one of ordinary skill in the art. One of ordinary skill in winding, much less in winding in a geodesic isotenoid manner, would know of any number of computer programs that could be used. I selected one of those well known programs, namely one from NASA, but any program which would result in winding in a geodesic isotenoid manner would do. The Examiner is mistaken in thinking that one of ordinary skill would require undue experimentation to make the claimed invention, when all they would have to do is do winding in the manner well known in the art to one of ordinary

skill in the art to which the invention pertains, with another relevant portion of Composites being attached which discusses the basics of such winding.

8. With respect to the comments of the Examiner concerning the natural frequency being greater than a predetermined maximum rotational operating speed, one of ordinary skill in the art would appreciate that natural frequency in radians per second can easily be converted using a conversion factor to revolutions per minute, i.e. rotational operating speed. The use of this well known driveshaft equation would be readily appreciated by one of ordinary skill in the art, such that the wording used by Applicant would not be considered indefinite.

9. With respect to comments of the Examiner that the device of my invention would have been obvious, and that other prior art shafts would perform equally well, I attach an e-mail I received from Honda's Honda of America Racing Team concerning the superior performance associated with my product, which they decided to use because of its performance, despite the fact that Honda has its own Research and Development department.

10. To further appreciate the non-obvious nature of my invention, I am also attaching pages from the April 2005 issue of the magazine, Popular Hot Rodding, where my product has been named one of the 20 Must Have Products. My device is not just

competitive with the competition, it surpasses them due to my invention. To the best of my knowledge, no other shaft out there is made like mine, there never has been one like mine, and no other performs up to my shaft's level.

11. To further demonstrate that my invention is not obvious and is recognized as being unique and superior, at the Performance Racing Industry tradeshow in Indianapolis, December 9-11, 2004, there were almost 4,000 exhibitors and approximately 40,000 in attendance. The product which is the subject of my patent application was chosen as one of the Top 20 products of the entire show.

The undersigned, Jerald S. Burkett, further declares that all statements made herein of his own knowledge are true and that all statements made on information and belief are believed to be true; and further that those statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or document or any registration resulting therefrom.

Date: May 31, 2005

/Jerald S. Burkett/  
Jerald S. Burkett